



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

D205-634-041
Job Sheet 190967



Part No: D205-634-041

Job Qty: 1 pcs

Part Name: Replacement Skidtube with Standard Wearplates Fits LH or RH



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 2/20/19

Job Tracking No:

Due Date: 3/22/19

Created By: Jesse White

Type: Stock

Description: SIQP

Note: DWG D2580 REV H SHEETS 1,2,3,8 IPP Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ IPP Rev P 10.02.19 per PAR09-043 EC verified by:DD IPP Rev. O 06.02.28 Added paperwork EC IPR Rev:P 07-07-09 SS Wearplates & Gaskets JLM IPP Rev:Q 10.12.01 as per chg003 DD ver:EC IPP REV:R 12.01.23 AS PER ECN11-684 VERF:EC IPP REV:S 17.12.08 REMOVE GASKET AS PER INTUITIVE INFO DD VERF:JFS

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
110	Skidtubes - Bend - 1	1 pcs		3/22/19	0.00	0.65	Skidtubes - Bend		<i>MbG</i>
120	Skidtubes - 2 - B4B	1 pcs		3/22/19	0.00	2.89	Skidtubes - 1 - B4B		
							Skidtubes - 2 - B4B		
							Skidtubes - 3 - B4B		<i>MbG</i>
							Skidtubes - 4 - B4B		
							Skidtubes - 5 - B4B		
							Skidtubes - 6 - B4B		
							Skidtubes - 7 - B4B		
130	QC 5	1 pcs		3/22/19	0.00	0.00	QC 5 - 10		
							QC 5 - 12		
							QC 5 - 17		
							QC 5 - 18		<i>BE</i>
							QC 5 - 19		
							QC 5 - 22		
							QC 5 - 24		
							QC 5 - 3		
							QC 5 - 42		
							QC 5 - 43		
							QC 5 - 49		
							QC 5 - 51		
							QC 5 - 58		
							QC 5 - 68		
							QC 5 - 9		
							QC 5 - 50		
							QC 5 - 30		
140	Skidtubes - 3 - B4B	1 pcs		3/22/19	0.00	2.89	Skidtubes - 1 - B4B		
							Skidtubes - 2 - B4B		



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Container No: S157530



Part: D205-634-041

Job No: 190967

Serial No/Batch: S157530

Revision: H

Inspector:

Exp Date:

Instructions: TC STC SH96-88 Issue 3, FAA STC SR00563I

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor		
			QC / QA Coordinator		
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread ☐			
Other/Details:					

					Skidtubes - 3 - B4B	MGG
					Skidtubes - 4 - B4B	
					Skidtubes - 5 - B4B	BE
					Skidtubes - 6 - B4B	
					Skidtubes - 7 - B4B	
					QC 10 - 10	
150	QC 10	1 pcs	3/22/19	0.00 0.00	QC 10 - 18	
					QC 10 - 24	
					QC 10 - 43	
					QC 10 - 50	
					QC 10 - 58	
					QC 10 - 9	PD 19-03-19
160	QC 5	1 pcs	3/22/19	0.00 0.00	QC 5 - 10	
					QC 5 - 12	
					QC 5 - 17	
					QC 5 - 18	
					QC 5 - 19	
					QC 5 - 22	
					QC 5 - 24	
					QC 5 - 3	
					QC 5 - 42	
					QC 5 - 43	
					QC 5 - 49	
					QC 5 - 51	
					QC 5 - 58	
					QC 5 - 68	
					QC 5 - 9	PD 19-03-19
					QC 5 - 50	
					QC 5 - 30	
170	Handfinish - 1-1 Chemical-B4B	1 pcs	3/22/19	0.00 1.31	Handfinish - 1 - 1 - B4B	
					Handfinish - 1 - 2 - B4B	
					Handfinish - 1 - 3 - B4B	
					Handfinish - 1 - 4 - B4B	
					Handfinish - 1 - 5 - B4B	
					Handfinish - 1 - 6 - B4B	
					Handfinish - 1 - 7 - B4B	
					Handfinish - 1 - 8 - B4B	
					Handfinish - 1 - 9 - B4B	
					Handfinish - 1 - 10 - B4B	DR 19/03/25
					Handfinish - 1 - 11 - B4B	
					Handfinish - 1 - 12 - B4B	
					Handfinish - 1 - 13 - B4B	
					Handfinish - 1 - 14 - B4B	
					Handfinish - 1 - 15 - B4B	
					Handfinish - 1 - 16 - B4B	
					Handfinish - 1 - 17 - B4B	
					Handfinish - 1 - 18 - B4B	
					Handfinish - 1 - 19 - B4B	
					Handfinish - 1 - 20 - B4B	
					Handfinish - 1 - 21 -	

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					

				B4B	
				Handfinish - 1 - 22 - B4B	
180	Powdercoat - 1 White GI(A)-B4B	1 pcs	3/22/19	0.00 0.34	Powdercoat - 1 - B4B
				Powdercoat - 2 - B4B	
				Powdercoat - 3 - B4B	
				Powdercoat - 4 - B4B	
190	QC 3	1 pcs	3/22/19	0.00 0.00	QC 3 - 10
				QC 3 - 13	
				QC 3 - 15	
				QC 3 - 17	
				QC 3 - 18	
				QC 3 - 2	
				QC 3 - 26	
				QC 3 - 28	
				QC 3 - 3	
				QC 3 - 30	
				QC 3 - 34	
				QC 3 - 36	
				QC 3 - 41	
				QC 3 - 51	
				QC 3 - 58	
				QC 3 - 59	
				QC 3 - 6	
				QC 3 - 68	
				QC 3 - 9	
200	Handfinish - 4-1-Assembly-B4B	1 pcs	3/22/19	0.00 1.31	Handfinish - 4 - 1 - B4B
				Handfinish - 4 - 10 - B4B	
				Handfinish - 4 - 11 - B4B	
				Handfinish - 4 - 12 - B4B	
				Handfinish - 4 - 13 - B4B	
				Handfinish - 4 - 14 - B4B	
				Handfinish - 4 - 15 - B4B	
				Handfinish - 4 - 2 - B4B	
				Handfinish - 4 - 3 - B4B	
				Handfinish - 4 - 4 - B4B	
				Handfinish - 4 - 5 - B4B	
				Handfinish - 4 - 6 - B4B	
				Handfinish - 4 - 7 - B4B	
				Handfinish - 4 - 8 - B4B	
				Handfinish - 4 - 9 - B4B	
210	QC 5	1 pcs	3/22/19	0.00 0.00	QC 5 - 10
				QC 5 - 12	
				QC 5 - 17	
				QC 5 - 18	
				QC 5 - 19	
				QC 5 - 22	
				QC 5 - 24	
				QC 5 - 3	
				QC 5 - 42	
				QC 5 - 43	
				QC 5 - 49	
				QC 5 - 51	
				QC 5 - 58	

BK 19-03-26

BEB. DAS 59 9-89

BEB 19-03-26

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					

					QC 5 - 68	MAR 27 2019	DAS 68
					QC 5 - 9		9-89
					QC 5 - 50		
					QC 5 - 30		
220	Packaging 3-1 - Stock - B4B	1 pcs	3/22/19	0.00 0.00	Packaging 3 - 1 - B4B		DAS
					Packaging 3 - 2 - B4B		46 MAR 27 2019
					Packaging 3 - 3 - B4B		9-89
					Packaging 3 - 4 - B4B		
					Packaging 3 - 5 - B4B		
					Packaging 3 - 6 - B4B		
					Packaging 3 - 7 - B4B		
					Packaging 3 - 8 - B4B		
					Packaging 3 - 9 - B4B		
					Packaging 3 - 10 - B4B		
					Packaging 3 - 11 - B4B		
					Packaging 3 - 12 - B4B		
					Packaging 3 - 13 - B4B		
					Packaging 3 - 14 - B4B		
					Packaging 3 - 15 - B4B		
					Packaging 3 - 16 - B4B		
					Packaging 3 - 17 - B4B		
					Packaging 3 - 18 - B4B		
					Packaging 3 - 19 - B4B		
					Packaging 3 - 20 - B4B		
					Packaging 3 - 21 - B4B		
					Packaging 3 - 22 - B4B		
					Packaging 3 - 23 - B4B		
					Packaging 3 - 24 - B4B		
					Packaging 3 - 25 - B4B		
					Packaging 3 - 26 - B4B		
					Packaging 3 - 27 - B4B		
					Packaging 3 - 28 - B4B		
					Packaging 3 - 29 - B4B		
					Packaging 3 - 30 - B4B		
					Packaging 3 - 31 - B4B		
					Packaging 3 - 32 - B4B		
					Packaging 3 - 33 - B4B		
					Packaging 3 - 34 - B4B		
					Packaging 3 - 35 - B4B		DAS
					Packaging 3 - 36 - B4B		21 9-89
225	DC - 1 - B4B	1 pcs	3/22/19	0.00 0.00	DC - 1 - B4B		MAR 27 2019
					DC - 2 - B4B		
230	QC 21 - FG	1 pcs	3/22/19	0.00 0.00	QC 21 - FG - 21		DAS
					QC 21 - FG - 70		21 9-89
					QC 21 - FG - 53		MAR 27 2019

Part Op 110 - Skid tubes - 1-Bend as per program D2580.C on CNC Bender and Folio 16 2-Cut tubes as per Dwg. D2580 3- scribe
Descriptions: batch# in aft end of tube

120 - Skid tubes - 1- Deburr ends and remove bending marks 2- Prepare tube for welding as per QSI 004

130 - QC5- Inspect part completeness to step on W/O

140 - Skid tubes 1-Weld step D2576 as per Dwg. D2580 and QSI 004 2-Grind welds on step as per Dwg D2580 3- Insert D4202-1 spacer, swage as per QSI002 and trim/ grind flush per QSI002 and dwg. Hold x-bolt with DT9701 Use tube expander 1/2 x17G to start expansion and finish with 1/2 x 18G to achieve dwg dimension. 4-Drill holes for wearplates using DT 8217 & DT8937, 7.40" from most fwd saddle holes (ref only) Open holes to 19/64", adjust stopper not to hit web. Deburr 5-Drill pilot holes for aft cap using DT 8215 Open holes to 0.208". Deburr 6-Drill pilot holes for Tow ring using DT8091, open to .640" and Deburr

150 - QC10- Inspect visual per QSI004- ground welds

160 - QC5- Inspect part completeness to step on W/O

170 - Chemical Conversion Coat per QSI005 4.1 - Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution.

180 - White Gloss (Ref 4.3.5.1) per QSI005 4.3-Alum START TIME: 8:00 OVEN TEMPERATURE: 320°

FINISH TIME: 8:30 - M 138989

190 - QC3- Inspect Part Finish

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					

200 - Assemble as per dwg - 1-Install inserts & wearplates as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates A/R Sikaflex-291 5128386 Sikaflex expire date: 19/03 2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580 3-Inspect for foreign object per QSI 024 4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive A/R Sikaflex-291 5128386 Sikaflex expire date: 19/03 5-Wing Walk as per Dwg D2580 and QSI 005 4.4 Batch: 3163430

210 - QC5- Inspect part completeness to step on W/O - Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

220 - Identify and pack for shipping as per PPPD205-634-041 Location: _____ PPP Rev: _____

225 - Document Control - Photocopy D205-634 bluefile & type labels per PPP D205-634-041 CHG006

230 - QC21- Final Inspection - Work Order Release

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D2580-1	205 Bent Tube	1 pcs (1 ea)	110-Skidtubes - Bend - 1	5140513
D2576-3	Step (Machining Detail)	1 pcs (1 ea)	140-Skidtubes - 3 - B4B	5089827
D4202-1	Spacer	20 pcs (20 ea)	140-Skidtubes - 3 - B4B	5135425
ALS7-1032-130	Rivnut	50 Ea (50 ea)	200-Handfinish - 4-1-Assembly-B4B	5007279
AN3-5A	Bolt	2 Ea (2 ea)	200-Handfinish - 4-1-Assembly-B4B	5095480
AN3C4A	Bolt	50 Ea (50 ea)	200-Handfinish - 4-1-Assembly-B4B	5152638
D2594-1	Plug	16 pcs (16 ea)	200-Handfinish - 4-1-Assembly-B4B	5133698
D2594-3	O-Ring	16 pcs (16 ea)	200-Handfinish - 4-1-Assembly-B4B	5106795
D2855	Cap	1 pcs (1 ea)	200-Handfinish - 4-1-Assembly-B4B	5126188
D3564-11	Wearplate Aft	1 pcs (1 ea)	200-Handfinish - 4-1-Assembly-B4B	5133742
D3564-13	Wearpad Fwd	1 pcs (1 ea)	200-Handfinish - 4-1-Assembly-B4B	5133757
D3564-5	Wearplate Center	1 pcs (1 ea)	200-Handfinish - 4-1-Assembly-B4B	5120441
D3564-9	Wearplate Fwd	1 pcs (1 ea)	200-Handfinish - 4-1-Assembly-B4B	5120439
NAS1149C0332R	Washer	50 Ea (50 ea)	200-Handfinish - 4-1-Assembly-B4B	5148669
NAS1149D0332J	Washer	2 Ea (2 ea)	200-Handfinish - 4-1-Assembly-B4B	5123446

M.U. 008876

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
110-Skidtubes - Bend - 1	D2580-1	1	7	0
140-Skidtubes - 3 - B4B	D2576-3	1	18	0
	D4202-1	20	883	0
200-Handfinish - 4-1-Assembly-B4B	ALS7-1032-130	50	1,178	0
	AN3-5A	2	371	0
	AN3C4A	50	2,315	0
	D2594-1	16	178	0
	D2594-3	16	182	0
	D2855	1	70	0
	D3564-11	1	15	0
	D3564-13	1	19	0
	D3564-5	1	9	0
	D3564-9	1	9	0
	NAS1149C0332R	50	4,311	0
	NAS1149D0332J	2	2,585	0

Part Specifications

Specifications could not be found.

Plex 2/20/19 11:20 AM dart.white.jesse

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐ ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled		FAULT CATEGORY ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details: _____					

ITEM	QTY -041	QTY -045	QTY -047	QTY -049	PART NUMBER	DESCRIPTION
1	X				D2580-041	SKIDTUBE ASSEMBLY
2		X			D2580-045	SKIDTUBE ASSEMBLY
3			X		D2580-047	SKIDTUBE ASSEMBLY
4				X	D2580-049	SKIDTUBE ASSEMBLY
20	1	1	1	1	D2500-1-190	EXTRUSION
21			16	16	D2570	BUSHING
22	1	1	1	1	D2576-3	STEP
23		4			D2579	SPACER
24	16	16	8	8	D2594-1	PLUG
25	16	16	8	8	D2594-3	O-RING
26	1	1	1	1	D2596	205 WEB
27	1	1	1	1	D2855	AFT CAP
28	1	1			D3564-5	WEARSHOE
29	1	1			D3564-9	WEARSHOE
30	1	1			D3564-11	WEARSHOE
31	1	1			D3564-13	WEARSHOE
32	20	20	24	24	D4202-1	SPACER
33			1		D4406-041	WEARPLATE ASSEMBLY
34			1		D4406-043	WEARPLATE ASSEMBLY
35				1	D5061-1	FWD WEARPLATE
36				1	D5061-3	AFT WEARPLATE
60	50	50			ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
51	50	50			AN3C4A	BOLT
52	2	2	2	2	AN3-5A	BOLT
53			8	8	AN4-45A	BOLT
54	50	50			NAS1149C0332R	WASHER (AN980C10L)
55	2	2	2	2	NAS1149D0332J	WASHER (AN980JD10L)
56			8	8	MS21042-4	NUT (OR MS21042L4)

GENERAL NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB
POWDER COAT (-041/-047/-049) GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
POWDER COAT (-045) GREEN SANDTEX (REF 4.3.5.8) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4.
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D2580-041 = 33.7 lbs
D2580-045 = 33.7 lbs
D2580-047 = 45.1 lbs
D2580-049 = 32.0 lbs
- 8) WELDING PER DART QSI 004.
- 9) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 10) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 11) USE DART DRILL TEMPLATE DT8217 & DT8937 ONLY FOR D2580-041/-045 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTIONS B-B AND F-F (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-241-291.
- 12) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES FOR D2580-041/-045 AND 8 PLACES FOR D2580-047/-049)
- 13) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

H	SHEET: PL DELETE D3566-1/-5/-13 GASKETS, WEIGHTS UPDATED ACCORDINGLY. SHEETS 2 & 4 PICTORIAL UPDATE FOR REMOVAL OF GASKETS	SAD	17.06.09
G	ADDED -049, -047 WEIGHT UPDATED PER DSI 9596	AJS	14.04.09
F	INCORPORATE DEO D2580-E-1 PER PAR12-218	DC	13.06.20
E	ADD D2580-047 (ZN C4-7) AND D2580-7 (ZN B3-8); INCLUDED DEO D2580-D-1; REFORMATTED DRAWING TO CURRENT STANDARDS; DT8217 & DT8937 WAS TD2577-205 (ZN C4-1)	RF	11.06.21
D	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/ 9183	PH	07.04.06
C	REDRAWN, INCLUDED DEO 9094/ 9097	CP	98.06.26
B	AS MANUFACTURED	DS	96.12.02
A	NEW ISSUE	DS	96.09.16
REV.	DESCRIPTION	BY	DATE
DESIGN	DS		
DRAWN	SAD		
CHECKED	<i>[Signature]</i>		
MFG. APPR.	<i>[Signature]</i>		
APPROVED	<i>[Signature]</i>		
DE APPR.	<i>[Signature]</i>		
DATE	17.06.09		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. REV. H
D2580 SHEET 1 OF 9
TITLE SCALE
205 SKIDTUBE ASSEMBLY NTS

COPYRIGHT © 1996 BY DART AEROSPACE LTD
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR DISSEMINATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

RELEASED

2017 JUL 05
ECN 7-519

Entered: _____ Date: _____

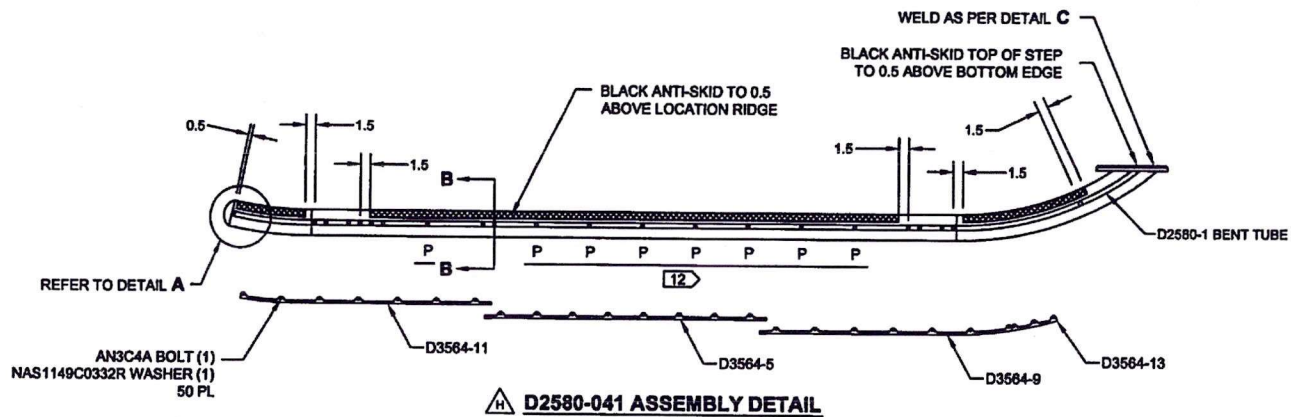


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

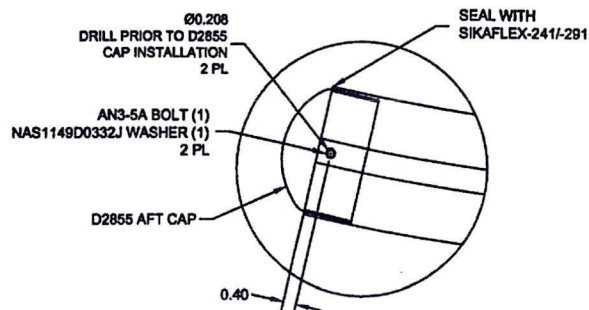
NCR No. _____

Route update only ☐

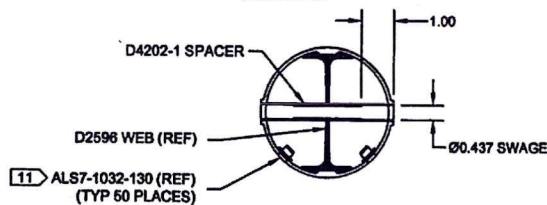
Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor		
			QC / QA Coordinator		
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details: _____					



DETAIL A
SCALE 5X



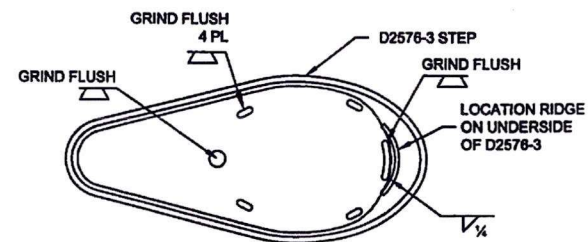
SECTION B-B
SCALE 5X



AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

1. INSERT D4202-1 SPACER (20 PLACES)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

DETAIL C
SCALE 5X



RELEASED

2017 JUL 05

DESIGN	DS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	SAD		
CHECKED	<i>[Signature]</i>	DRAWING NO. D2580	REV. H
MFG. APPR.	<i>[Signature]</i>		SHEET 2 OF 9
APPROVED	<i>[Signature]</i>	TITLE 205 SKIDTUBE ASSEMBLY	SCALE NTS
DE APPR.	<i>[Signature]</i>		
DATE	17.06.09	COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

Entered: _____ Date: _____

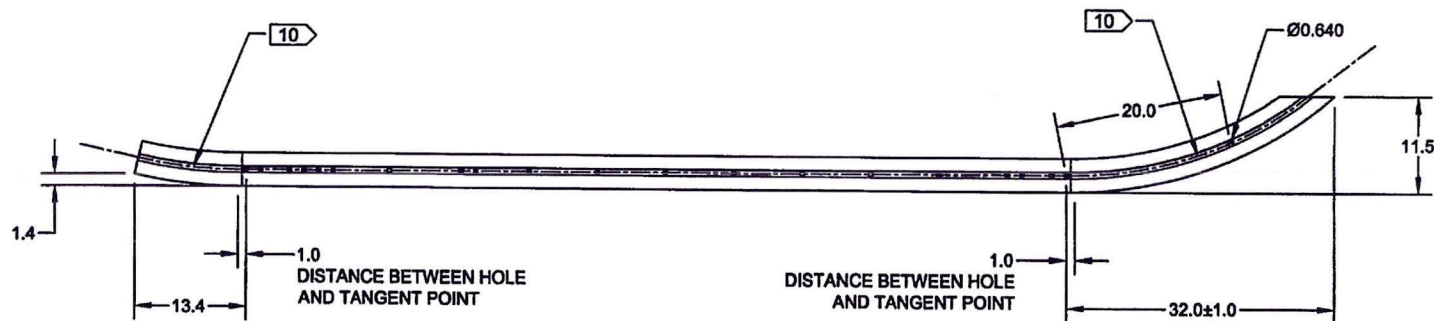


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QS1042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					



D2580-1 BENT TUBE
(MAKE FROM D2580-101 TUBE)

RELEASED
2017 JUL 05 4P

DESIGN	DS	DART AEROSPACE LTD HAWKESSBURY, ONTARIO, CANADA	
DRAWN	SAD		
CHECKED	<i>[Signature]</i>	DRAWING NO. D2580	REV. H SHEET 3 OF 9
MFG. APPR.	<i>[Signature]</i>	TITLE 205 SKIDTUBE ASSEMBLY	SCALE NTS
DE APPR.	<i>[Signature]</i>	COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DATE	17.06.09		

Entered: _____ Date: _____

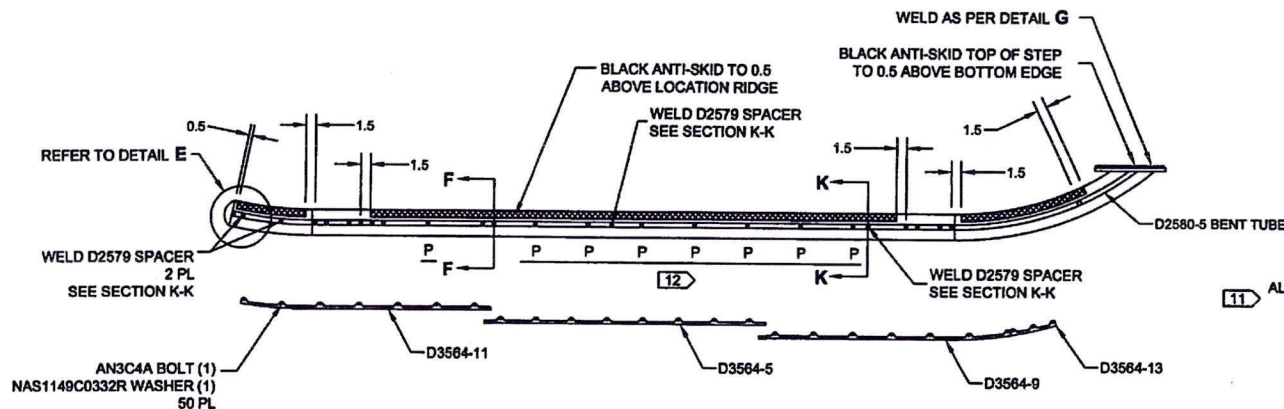


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

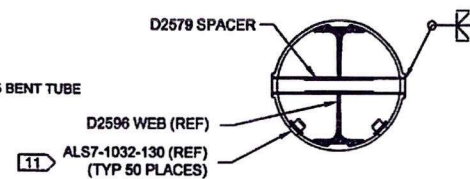
Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					



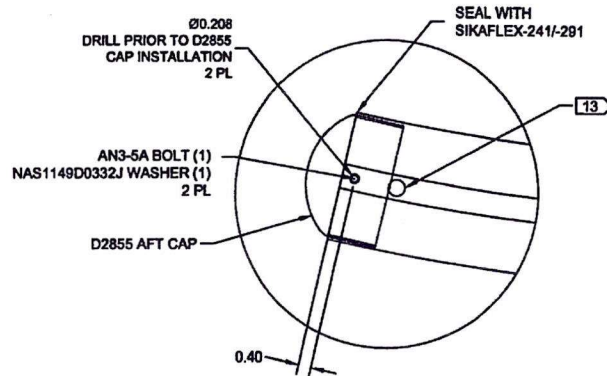
D2580-045 ASSEMBLY DETAIL

**SECTION K-K
SCALE 5X**



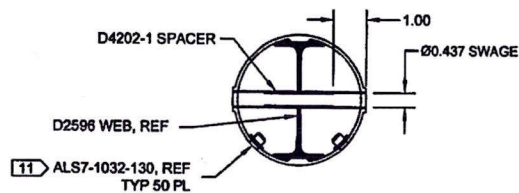
AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (4 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. DO NOT C'BORE

**DETAIL E
SCALE 5X**



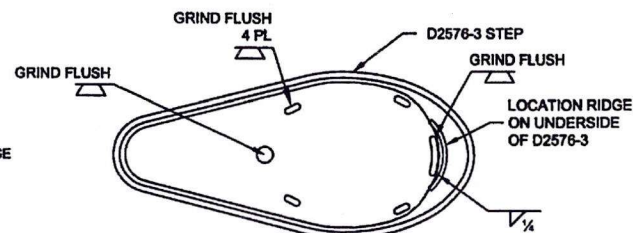
RELEASED
2017 JUL 05

**SECTION F-F
SCALE 5X**



AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. INSERT D4202-1 SPACER (20 PLACES)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM/GRIND FLUSH PER QSI 002

**DETAIL G
SCALE 5X**



DESIGN	DS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	SAD		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. H
MFG. APPR.	<i>[Signature]</i>	D2580	SHEET 4 OF 9
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	205 SKIDTUBE ASSEMBLY	NTS
DATE	17.06.09	COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

Entered: _____ Date: _____

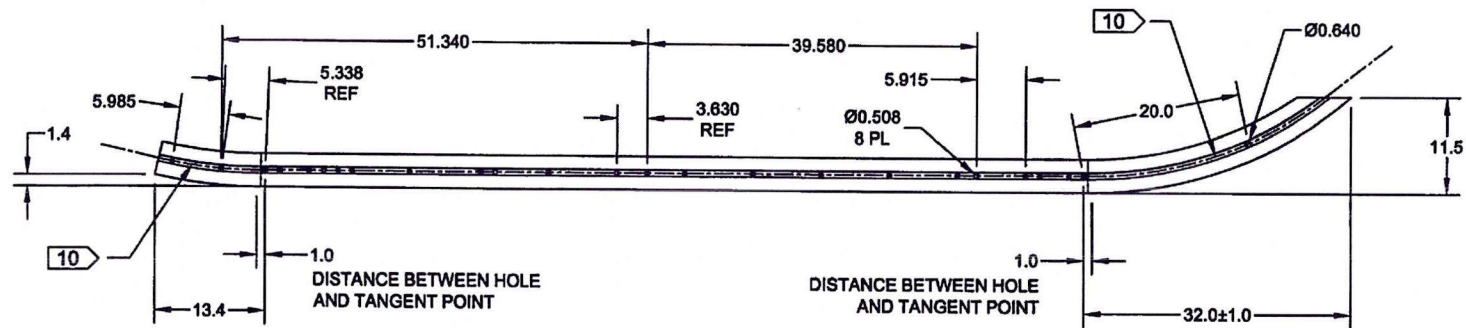


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					



D2580-5 BENT TUBE
(MAKE FROM D2580-101 TUBE)

RELEASED

2017 JUL 05

DESIGN	DS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	SAD		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. H
MFG. APPR.	<i>[Signature]</i>	D2580	SHEET 5 OF 9
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	205 SKIDTUBE ASSEMBLY	NTS
DATE	17.06.09	COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

Entered: _____ Date: _____

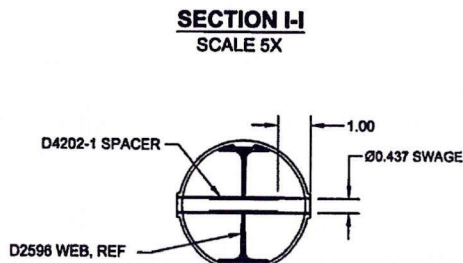
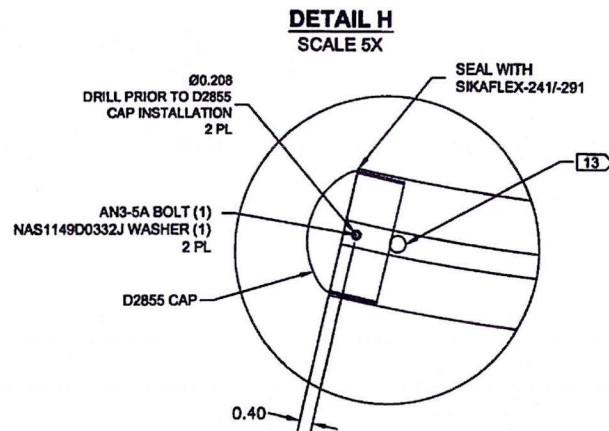
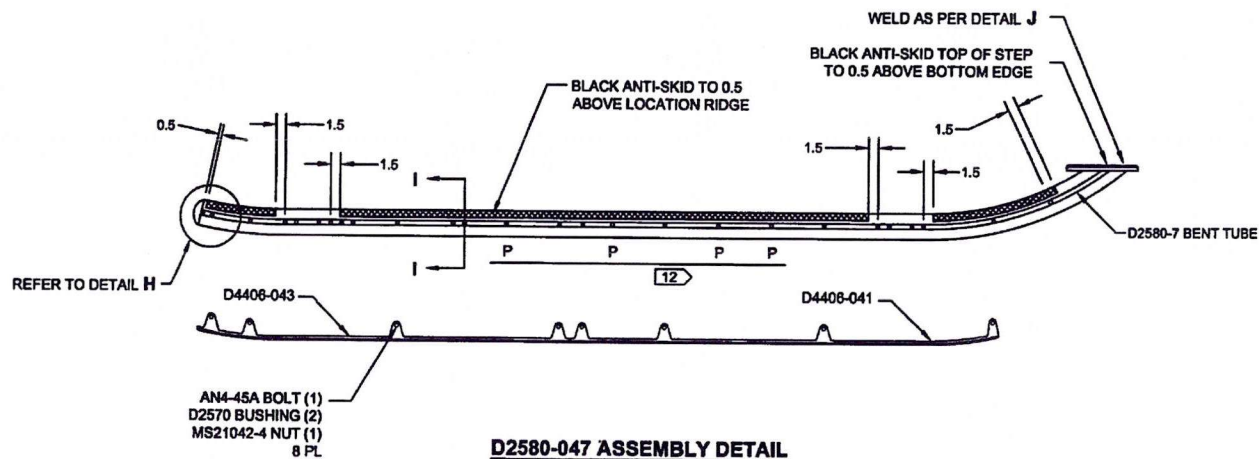


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

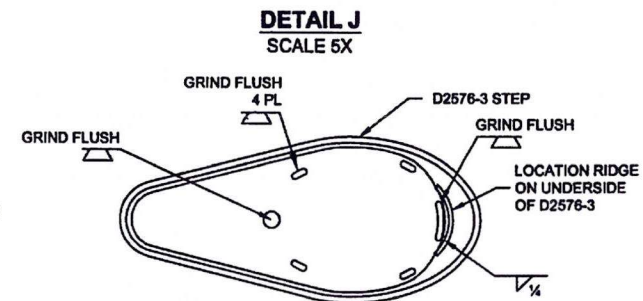
NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐ ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled		FAULT CATEGORY ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					



AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. INSERT D4202-1 SPACER (24 PLACES)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM/GRIND FLUSH PER QSI 002



RELEASED

2017 JUL 05 4P

DESIGN	DS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	SAD		
CHECKED	<i>[Signature]</i>	DRAWING NO. D2580	REV. H
MFG. APPR.	<i>[Signature]</i>		SHEET 6 OF 9
APPROVED	<i>[Signature]</i>	TITLE 205 SKIDTUBE ASSEMBLY	SCALE NTS
DE APPR.	<i>[Signature]</i>		
DATE	17.06.09	COPYRIGHT © 1998 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

Entered: _____ Date: _____

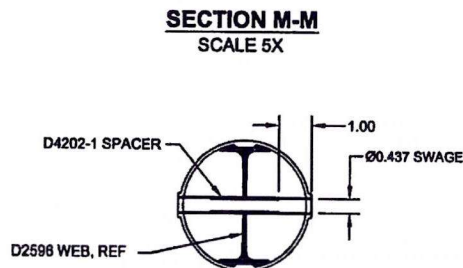
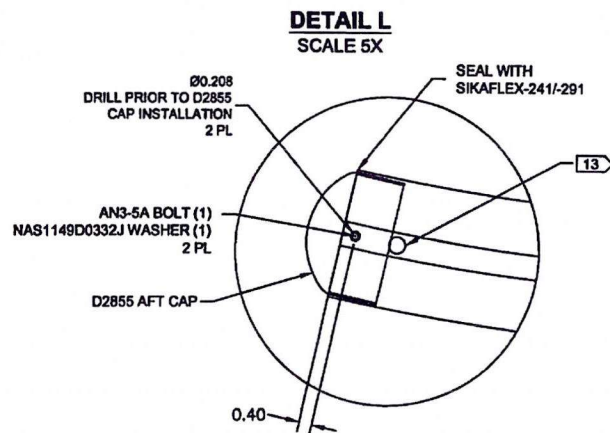
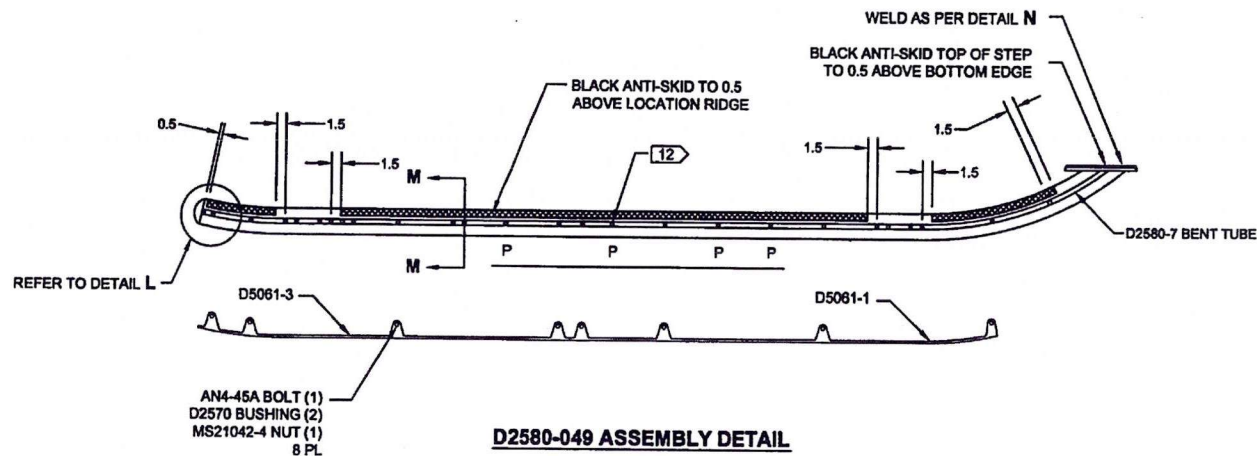


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

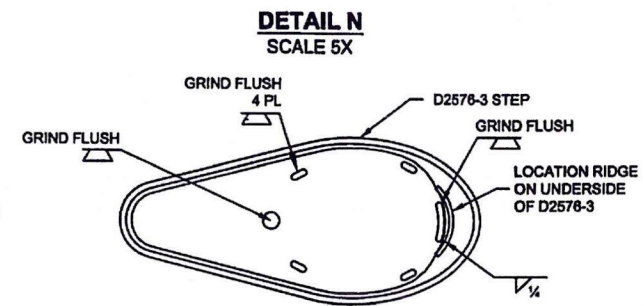
NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐ ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled		FAULT CATEGORY ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					



AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. INSERT D4202-1 SPACER (24 PLACES)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM/GRIND FLUSH PER QSI 002



RELEASED

2017 JUL 05 *up*

DESIGN	DS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	SAD		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. H
MFG. APPR.	<i>[Signature]</i>	D2580	SHEET 7 OF 9
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	205 SKIDTUBE ASSEMBLY	NTS
DATE	17.06.09	COPYRIGHT © 1998 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

Entered: _____ Date: _____

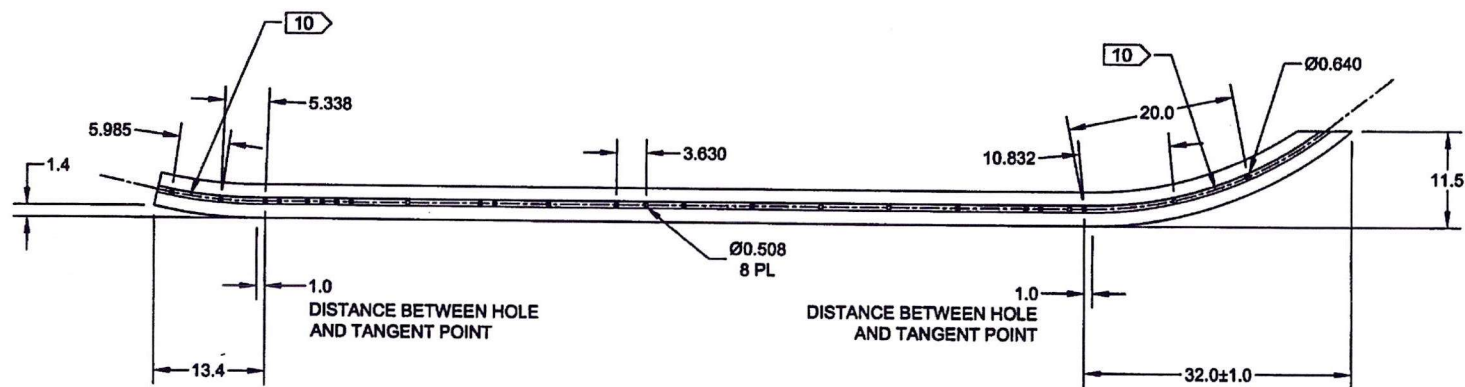


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					



D2580-7 BENT TUBE
(MAKE FROM D2580-101 TUBE)

RELEASED

2017 JUL 05 *ap*

DESIGN	DS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	SAD		
CHECKED	<i>MB</i>	DRAWING NO. D2580	REV. H SHEET 8 OF 9
MFG. APPR.	<i>JS</i>	TITLE 205 SKIDTUBE ASSEMBLY	SCALE NTS
APPROVED	<i>HT</i>	COPYRIGHT © 1998 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DE APPR.	<i>HT</i>		
DATE	17.06.09		

Entered: _____ Date: _____

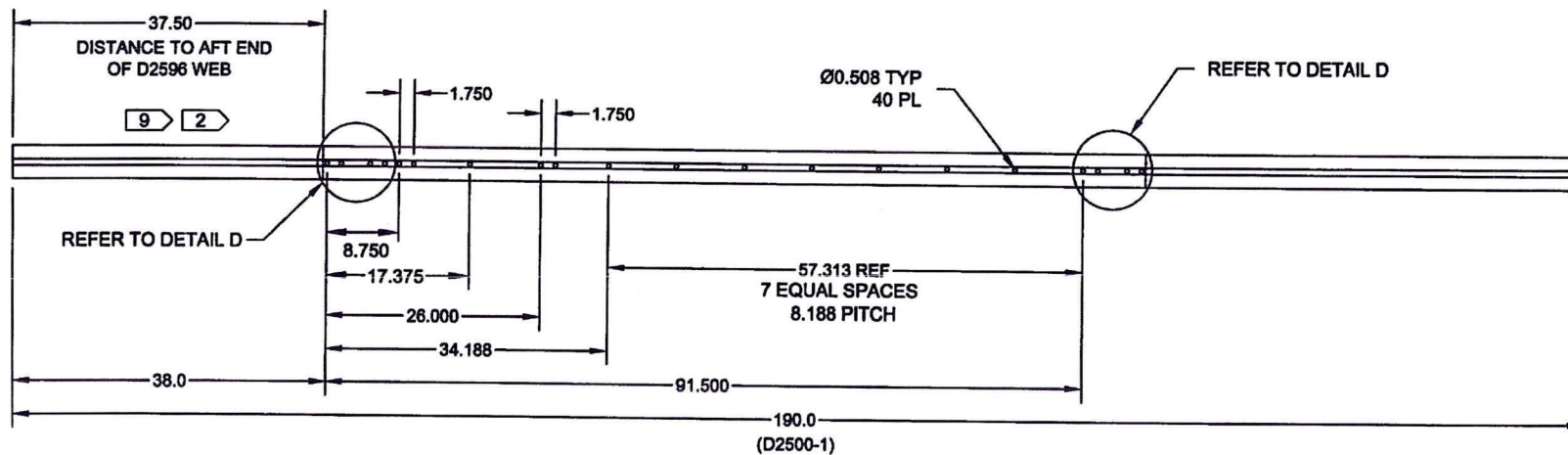


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

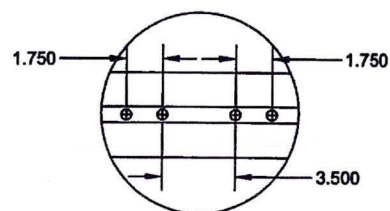
NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐ ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread		Other/Details:			



D2580-101 TUBE



DETAIL D
SCALE 5X

RELEASED

2017 JUL 05

DESIGN	DS	DART AEROSPACE LTD	
DRAWN	SAD	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. H
MFG. APPR.	<i>[Signature]</i>	D2580	SHEET 9 OF 9
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	205 SKIDTUBE ASSEMBLY	NTS
DATE	17.06.09	COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

8

7

6

5

4

3

2

1

D

C

B

A

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐		DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐																															
Date : _____		Sequence #: _____		QTY Affected : _____		MRB (QSI042)																													
Description Work Order Deviation				Disposition		Completed By																													
						Lead hand / Supervisor																													
						QC / QA Coordinator																													
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY <table border="0"><tr><td>☐ Pressure/Forced</td><td>☐ Contamination</td><td>☐ Power Loss/Surge</td><td>☐ Positioned Wrong</td></tr><tr><td>☐ Bending</td><td>☐ Misaligned/off center</td><td>☐ Folio/Program</td><td>☐ Outside Tolerance</td></tr><tr><td>☐ Crushing</td><td>☐ BOM/Route</td><td>☐ Grain Direction</td><td>☐ Drawing</td></tr><tr><td>☐ Cracks</td><td>☐ Broken/Damage/Defect</td><td>☐ Weld</td><td>☐ Finish</td></tr><tr><td>☐ Crimp/Kink/Ripple/Wave/Twist</td><td>☐ Incomplete/Unclear Instructions</td><td>☐ Wrong Stock Pulled</td><td>☐ Part Lost/Missing</td></tr><tr><td>☐ Marks/Chatter</td><td>☐ Drill Holes</td><td>☐ Out of Sequence</td><td>☐ Misread</td></tr><tr><td>☐ Mislabeled</td><td>☐ Fit/Function</td><td>☐ Off-set/Set-up</td><td></td></tr></table>						☐ Pressure/Forced	☐ Contamination	☐ Power Loss/Surge	☐ Positioned Wrong	☐ Bending	☐ Misaligned/off center	☐ Folio/Program	☐ Outside Tolerance	☐ Crushing	☐ BOM/Route	☐ Grain Direction	☐ Drawing	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Finish	☐ Crimp/Kink/Ripple/Wave/Twist	☐ Incomplete/Unclear Instructions	☐ Wrong Stock Pulled	☐ Part Lost/Missing	☐ Marks/Chatter	☐ Drill Holes	☐ Out of Sequence	☐ Misread	☐ Mislabeled	☐ Fit/Function	☐ Off-set/Set-up	
☐ Pressure/Forced	☐ Contamination	☐ Power Loss/Surge	☐ Positioned Wrong																																
☐ Bending	☐ Misaligned/off center	☐ Folio/Program	☐ Outside Tolerance																																
☐ Crushing	☐ BOM/Route	☐ Grain Direction	☐ Drawing																																
☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Finish																																
☐ Crimp/Kink/Ripple/Wave/Twist	☐ Incomplete/Unclear Instructions	☐ Wrong Stock Pulled	☐ Part Lost/Missing																																
☐ Marks/Chatter	☐ Drill Holes	☐ Out of Sequence	☐ Misread																																
☐ Mislabeled	☐ Fit/Function	☐ Off-set/Set-up																																	
Other/Details: _____ _____ _____																																			